



Testimony

Before the Subcommittee on Highways and Transit  
Committee on Transportation and Infrastructure House  
of Representatives

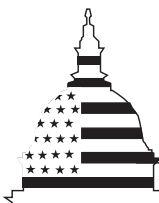
---

For Release on Delivery  
Expected at 2:00 p.m. EDT  
Thursday, June 20, 2002

# MASS TRANSIT

## Status of New Starts Program and Potential for Bus Rapid Transit Projects

Statement of John H. Anderson, Jr.  
Managing Director, Physical Infrastructure Issues



G A O

Accountability \* Integrity \* Reliability

## Report Documentation Page

<b>Report Date</b> 00JUN2002	<b>Report Type</b> N/A	<b>Dates Covered (from... to)</b> -
<b>Title and Subtitle</b> MASS TRANSIT: Status of New Starts Program and Potential for Bus Rapid Transit Projects		<b>Contract Number</b>
		<b>Grant Number</b>
		<b>Program Element Number</b>
<b>Author(s)</b>		<b>Project Number</b>
		<b>Task Number</b>
		<b>Work Unit Number</b>
<b>Performing Organization Name(s) and Address(es)</b> U.S. General Accounting Office 441 G Street NW, Room LM Washington, D.C. 20548		<b>Performing Organization Report Number</b> GAO-02-840t
<b>Sponsoring/Monitoring Agency Name(s) and Address(es)</b>		<b>Sponsor/Monitor's Acronym(s)</b>
		<b>Sponsor/Monitor's Report Number(s)</b>
<b>Distribution/Availability Statement</b> Approved for public release, distribution unlimited		
<b>Supplementary Notes</b> The original document contains color images.		
<b>Abstract</b> see report		
<b>Subject Terms</b>		
<b>Report Classification</b> unclassified		<b>Classification of this page</b> unclassified
<b>Classification of Abstract</b> unclassified		<b>Limitation of Abstract</b> SAR
<b>Number of Pages</b> 13		

---

Mr. Chairman and Members of the Subcommittee,

We appreciate the opportunity to testify today on the Federal Transit Administration's (FTA) efforts to help fund transit projects. As you know, since the early 1970s, the federal government has provided a large share of the nation's capital investment in urban mass transportation. Much of this investment has come through FTA's New Starts program,<sup>1</sup> which helps pay for designing and constructing certain rail, bus, and trolley projects through full funding grant agreements.<sup>2</sup> The maximum amount of federal funds available to a project cannot exceed 80 percent of the estimated net cost. The Transportation Equity Act for the 21st Century (TEA-21),<sup>3</sup> enacted in 1998, authorized about \$6.1 billion in "guaranteed"<sup>4</sup> funding for the New Starts program through fiscal year 2003. Although the level of New Starts funding is higher than it has ever been, the demand for these resources is also extremely high. TEA-21 identified over 190 projects nationwide as eligible to compete for New Starts funding and directed FTA to prioritize projects for funding by evaluating, rating, and recommending potential projects on the basis of specific financial and project justification criteria.

We are here today to discuss the federal government's support for constructing or extending transit systems through FTA's New Starts Program and the availability of lower cost mass transit approaches. Given the high demand for new and expanded transit facilities across the nation, communities need to examine approaches that stretch the federal and local dollar yet still provide high quality transit services for the public. My testimony today summarizes the results of our recent reports<sup>5</sup> on (1) the

---

<sup>1</sup>Other federal funds available through the Department of Transportation (DOT) highway and transit programs can be used to develop, plan, or construct these projects.

<sup>2</sup>A full funding grant agreement establishes the terms and conditions of federal financial participation in the project and the maximum amount of federal New Starts financial assistance for the project. The grant agreement also defines a project's scope, including the length of the system and the number of stations; its schedule, including the date when the system is expected to open for service; and its cost.

<sup>3</sup>Public Law 105-178 (June 9, 1998).

<sup>4</sup>"Guaranteed" funds are subject to a procedural mechanism designed to ensure that minimum amounts of funding are available each year.

<sup>5</sup>U.S. General Accounting Office, *Mass Transit: FTA's New Starts Commitments for Fiscal Year 2003*, [GAO-02-603](#) (Washington, D.C. Apr. 30, 2002); and U.S. General Accounting Office, *Mass Transit: Bus Rapid Transit Shows Promise*, [GAO-01-984](#) (Washington, D.C. Sept. 17, 2001).

---

status of the New Starts program, and (2) the potential of Bus Rapid Transit systems as an option for transit agencies to consider.

In summary:

- Although FTA has been faced with an impending transit budget crunch for several years, it is likely to end the TEA-21 authorization period with about \$310 million in unused New Starts commitment authority if its proposed fiscal year 2003 budget is enacted.<sup>6</sup> This is a result of several factors: (1) in fiscal year 2001, the Congress substantially increased FTA's authority to commit future federal funds, thus allowing FTA to commit an additional \$500 million to transit projects beyond the TEA-21 authorization period; (2) in fiscal year 2002, FTA stopped providing funding for projects in preliminary engineering activities, which freed up about \$150 million per year for projects; and (3) FTA released \$157 million committed to a suspended project and funded fewer projects than anticipated in fiscal years 2002 and 2003 by applying stricter eligibility criteria. Despite the likelihood of ending the TEA-21 period with unused commitment authority, FTA's current commitments, plus several projects that are likely to receive grant agreements soon, could significantly limit the funding of future projects. This could create an even more competitive environment for future New Starts projects seeking approval and funding than in the recent past. The administration and others have proposed limiting the amount of federal funds for New Starts projects to less than 80 percent in order to fund more projects; however, the effect of such a reduction on proposed projects is unclear at this time.
- Bus Rapid Transit is a promising approach to providing improved transit service at a lower capital cost. Bus Rapid Transit is designed to provide major improvements in the speed and reliability of bus service through barrier-separated busways, buses on High-Occupancy Vehicle (HOV) Lanes, or improved service on arterial streets. Our 2001 report on Bus Rapid Transit compared existing Bus Rapid Transit service in the United States with existing Light Rail systems<sup>7</sup> and found that Bus Rapid Transit

---

<sup>6</sup> In calculating the total amount of authority to make funding commitments, FTA considers the amount of "guaranteed" funds provided by TEA-21 for projects not already approved for a grant agreement plus its authority to make contingent commitments beyond the current authorization period, subject to future authorizations and appropriations.

<sup>7</sup> Light Rail transit is a metropolitan-electric railway system characterized by its ability to operate in a variety of environments, such as streets, subways, or elevated structures. Because Light Rail systems can operate on streets with other traffic, they typically use an overhead source for their electrical power, and passengers board from the street or platforms.

---

service generally had lower capital costs. The capital costs of Bus Rapid Transit in the cities we reviewed averaged \$13.5 million per mile for busways, \$9.0 million per mile for buses on HOV lanes, and \$680,000 per mile for buses on city streets, when adjusted to 2000 dollars.<sup>8</sup> For Light Rail lines, capital costs averaged about \$34.8 million per mile, ranging from \$12.4 million to \$118.8 million per mile, when adjusted to 2000 dollars.<sup>9</sup> In cities we reviewed that had both types of service, neither Bus Rapid Transit nor Light Rail had a consistent advantage in terms of operating costs. In general, we found that Bus Rapid Transit compared favorably to Light Rail systems in terms of operating speed and ridership capacity. Bus Rapid Transit provides a more flexible approach than Light Rail because buses can be rerouted more easily to accommodate changing travel patterns to eliminate transfers; operate on busways, HOV lanes and city arterial streets; and new routes can be implemented in stages. Transit officials believed that because Light Rail is permanent in a given corridor it could influence economic development over time, justifying its higher capital cost. However, transit officials also noted that buses have a poor public image. As a result, many transit planners are designing Bus Rapid Transit systems that offer service that will be an improvement over standard bus service.

---

## Background

To obtain a full funding grant agreement, a project must first progress through a local or regional review of alternatives, develop preliminary engineering plans, and obtain FTA's approval for final design.<sup>10</sup> TEA-21 requires that FTA evaluate projects against "project justification" and "local financial commitment" criteria contained in the act (see fig. 1). FTA assesses the project justification and technical merits of a project proposal by reviewing the project's mobility improvements, environmental benefits, cost-effectiveness, and operating efficiencies. In assessing a project's local financial commitment, FTA assesses the project's finance plan for

---

<sup>8</sup> Project capital costs typically include the costs to plan, design, and construct a project.

<sup>9</sup> All costs were adjusted to year 2000 dollars for comparison.

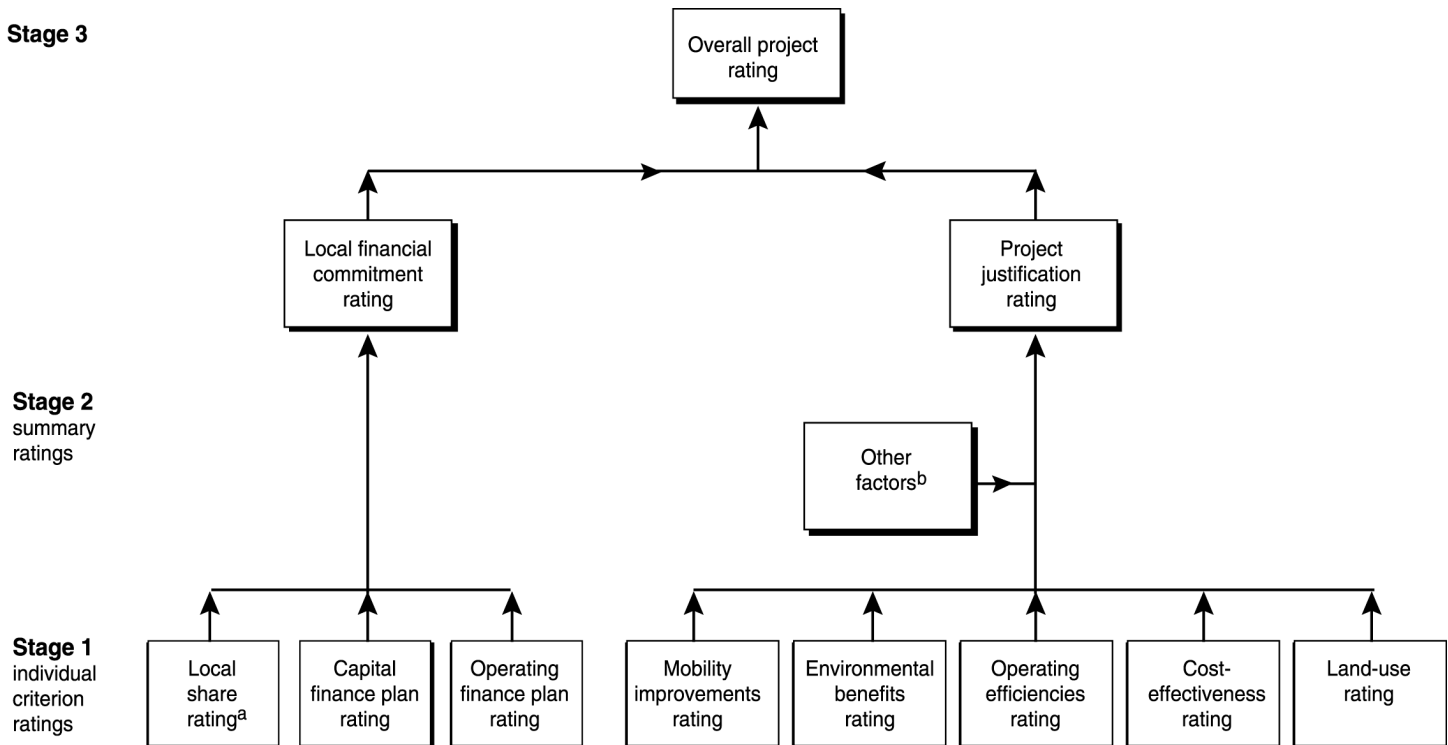
<sup>10</sup> The alternatives analysis stage provides information on the benefits, costs, and impacts of alternative strategies leading to the selection of a locally preferred solution to the community's mobility needs. During the preliminary engineering phase, project sponsors refine the design of the proposal, taking into consideration all reasonable design alternatives—which results in estimates of costs, benefits, and impacts. Final design is the last phase of project development before construction and may include right-of-way acquisition, utility relocation, and the preparation of final construction plans and cost estimates.

---

---

evidence of stable and dependable financing sources to construct, maintain, and operate the proposed system or extension.

**Figure 1: FTA's New Starts Evaluation and Rating Process**



<sup>a</sup>The local share is the percentage of a project's capital cost to be funded from sources other than federal funds.

<sup>b</sup>According to FTA, this optional criterion gives grantees the opportunity to provide additional information about a project that may add confidence of the project's overall success.

Source: FTA.

Although FTA's evaluation requirements existed prior to TEA-21, the act requires FTA to (1) develop a rating for each criterion as well as an overall rating of "highly recommended," "recommended," or "not recommended" and use these evaluations and ratings in approving projects' advancement toward obtaining grant agreements; and (2) issue regulations on the evaluation and rating process. TEA-21 also directs FTA to use these evaluations and ratings to decide which projects to recommend to the Congress for funding in a report due each February. These funding recommendations are also reflected in DOT's annual budget proposal. In the annual appropriations act for DOT, the Congress specifies the amounts of funding for individual New Starts projects.

---

Historically, federal capital funding for transit systems, including the New Starts program, has largely supported rail systems. Under TEA-21 the FTA Capital Program has been split 40 percent/40 percent/20 percent among New Starts, Rail Modernization, and Bus Capital grants. Although fixed-guideway bus projects are eligible under the New Starts program, relatively few bus-related projects are now being funded under this program.

---

## Status of the New Starts Program

Although FTA has been faced with an impending transit budget crunch for several years, the agency is likely to end the TEA-21 authorization period with about \$310 million in unused commitment authority if its proposed fiscal year 2003 budget is enacted. This will occur for several reasons. First, in fiscal year 2001, the Congress substantially increased FTA's authority to commit future federal funding (referred to as contingent commitment authority). This allowed FTA to make an additional \$500 million in future funding commitments. Without this action, FTA would have had insufficient commitment authority to fund all of the projects ready for a grant agreement. Second, to preserve commitment authority for future projects, FTA did not request any funding for preliminary engineering activities in the fiscal year 2002 and 2003 budget proposals. According to FTA, it had provided an average of \$150 million a year for fiscal years 1998 through 2001 for projects' preliminary engineering activities. Third, FTA took the following actions that had the effect of slowing the commitment of funds or making funds available for reallocation:

- FTA tightened its review of projects' readiness and technical capacity.<sup>11</sup> As a result, FTA recommended fewer projects for funding than expected for fiscal years 2002 and 2003. For example, only 2 of the 14 projects that FTA officials estimated last year would be ready for grant agreements are being proposed for funding commitments in fiscal year 2003.
- FTA increased its available commitment authority by \$157 million by releasing amounts associated with a project in Los Angeles for which the

---

<sup>11</sup>FTA uses a number of milestones to determine whether a project is sufficiently developed to be considered for a grant agreement. For example, FTA determines whether the necessary real estate has been acquired, utility arrangements have been made, and local funding sources are in place. According to FTA, this ensures that the project has no outstanding issues it must address.



---

federal funding commitment had been withdrawn.<sup>12</sup>

Although the New Starts program will likely have unused commitment authority through fiscal year 2003, the carry-over commitments from existing grant agreements that will need to be funded during the next authorization period are substantial. FTA expects to enter the period likely covered by the next authorization (fiscal years 2004 through 2009)<sup>13</sup> with over \$3 billion in outstanding New Starts grant commitments. In addition, FTA has identified five projects estimated to cost \$2.8 billion that will likely be ready for grant agreements in the next 2 years. If these projects receive grant agreements and the total authorization for the next program is \$6.1 billion—the level authorized under TEA-21—most of those funds will be committed early in the authorization period, leaving numerous New Starts projects in the pipeline facing bleak federal funding possibilities.

Some of the projects anticipated for the next authorization are so large they could have considerable impact on the overall New Starts program. For example, the New York Long Island Railroad East Side Access project may extend through multiple authorization periods. The current cost estimate for the East Side Access project is \$4.4 billion, including a requested \$2.2 billion in New Starts funds. By way of comparison, the East Side Access project would require about three times the total and three times the federal funding of the Bay Area Rapid Transit District Airport Extension project, which at about \$1.5 billion was one of the largest projects under TEA-21.

In order to manage the increasing demand for New Starts funding, several proposals have been made to limit the amount of New Starts funds that could be applied to a project, allowing more projects to receive funding. For instance, the President's fiscal year 2002 budget recommended that federal New Starts funding be limited to 50 percent of project costs starting in fiscal year 2004. (Currently, New Starts funding—and all federal

---

<sup>12</sup>We recommended in August 2001 that FTA adopt the practice of releasing commitment authority attributable to projects for which the federal funding commitment had been withdrawn and specifically, that it release the \$647 million reserved for two segments of the Los Angeles project. FTA has proposed a funding commitment for one of the previously suspended segments (Eastside); however, because the other suspended segment (Midcity) is not a candidate for a funding commitment at this time, FTA has released the associated commitment authority, increasing its available commitment by \$157 million.

<sup>13</sup>This assumes that the next authorization period covers 6 years.

---

funding—is capped at 80 percent.)<sup>14</sup> A 50 percent New Starts cap would, in part, reflect a pattern that has emerged in the program. Currently, few projects are asking for the maximum 80 percent federal New Starts share, and many have already significantly increased the local share in order to be competitive under the New Starts program. In the last 10 years, the New Starts share for projects with grant agreements has been averaging about 50 percent. In April 2002, we estimated that a 50 percent cap on the New Starts share for projects with signed full funding grant agreements would have reduced the federal commitments to these projects by \$650 million. Federal highway funds such as Congestion Mitigation and Air Quality funds can still be used to bring the total federal funding up to 80 percent. However, because federal highway funds are controlled by the states, using these funds for transit projects necessarily requires state-transit district cooperation. The potential effect of changing the federal share is not known. Whether a larger local match for transit projects could discourage local planners from supporting transit is unknown, but local planners have expressed this concern. According to transit officials, some projects could accommodate a higher local match, but others would have to be modified, or even terminated. Another possibility is that transit agencies may look more aggressively for ways to contain project costs or search for lower cost transit options.

---

## Bus Rapid Transit Shows Promise as a Means for Expanding Transit at a Lower Capital Cost

With demand high for New Starts funds, a greater emphasis on lower cost options may help expand the benefits of federal funding for mass transit; Bus Rapid Transit shows promise in this area. Bus Rapid Transit involves coordinated improvements in a transit system's infrastructure, equipment, operations, and technology that give preferential treatment to buses on urban roadways. Bus Rapid Transit is not a single type of transit system; rather, it encompasses a variety of approaches, including 1) using buses on exclusive busways; or 2) buses sharing HOV lanes with other vehicles; and 3) improving bus service on city arterial streets. Busways—special roadways designed for the exclusive use of buses—can be totally separate roadways or operate within highway rights-of-way separated from other traffic by barriers. Buses on HOV-lanes operate on limited-access highways designed for long-distance commuters. Bus Rapid Transit on

---

<sup>14</sup>According to FTA, total federal participation in any given transit project would remain capped at 80 percent. The proposed cap would limit only the percentage of New Starts funds available for projects. Transit projects could use other federal funds available (e.g., flexible highway funding) to secure total federal support for up to 80 percent of the project's costs.

---

Busways or HOV lanes is sometimes characterized by the addition of extensive park and ride facilities along with entrance and exit access for these lanes. Bus Rapid Transit systems using arterial streets may include lanes reserved for the exclusive use of buses and street enhancements that speed buses and improve service. During the review of Bus Rapid Transit systems that we completed last year, we found at least 17 cities in the United States were planning to incorporate aspects of Bus Rapid Transit into their operations.

FTA has begun to support the Bus Rapid Transit concept and expand awareness of new ways to design and operate high capacity Bus Rapid Transit systems as an alternative to building Light Rail systems. Because Light Rail systems operate in both exclusive and shared right-of-way environments, the limits on their length and the frequency of service are stricter than heavy rail systems.<sup>15</sup> Light Rail systems have gained popularity as a lower-cost option to heavy rail systems, and since 1980, Light Rail systems have opened in 13 cities.

Our September 2001 report showed that all three types of Bus Rapid Transit systems generally had lower capital costs than Light Rail systems. On a per mile basis, the Bus Rapid Transit projects that we reviewed cost less on average to build than the Light Rail projects, on a per mile basis. We examined 20 Bus Rapid Transit lines and 18 Light Rail lines and found Bus Rapid Transit capital costs averaged \$13.5 million per mile for busways, \$9.0 million per mile for buses on HOV lanes, and \$680,000 per mile for buses on city streets, when adjusted to 2000 dollars.<sup>16</sup> For the 18 Light Rail lines, capital costs averaged about \$34.8 million per mile, ranging from \$12.4 million to \$118.8 million per mile, when adjusted to 2000 dollars. On a capital cost per mile basis, the three different types of Bus Rapid Transit systems have average capital costs that are 39 percent, 26 percent, and 2 percent of the average cost of the Light Rail systems we reviewed.

The higher capital costs per mile for Light Rail systems are attributable to several factors. First, the Light Rail systems contain elements not required

---

<sup>15</sup> Heavy rail transit systems, such as in New York City, Chicago, and Washington, D.C., are defined by their operation on a totally separated right-of-way and use a third rail on the ground to power the trains. Heavy rail systems require platform boarding, typically have longer distances between stations, and have greater capacity than Light Rail systems.

<sup>16</sup> Project capital costs typically include the costs to plan, design, and construct a project.

---

in the Bus Rapid Transit systems, such as train signal, communications, and electrical power systems with overhead wires to deliver power to trains. Light Rail also requires additional materials needed for the guideway—rail, ties, and track ballast. In addition, if a Light Rail maintenance facility does not exist, one must be built and equipped. Finally, Light Rail vehicles, while having higher carrying capacity than most buses, also cost more—about \$2.5 million each.<sup>17</sup> In contrast, according to transit industry consultants, a typical 40-foot transit bus costs about \$283,000, and a higher-capacity bus costs about \$420,000. However, buses that incorporate newer technologies for low emissions or that run on more than one fuel can cost more than \$1 million each.

We also analyzed operating costs for six cities that operated both Light Rail and some form of Bus Rapid Transit service.<sup>18</sup> Whether Bus Rapid Transit or Light Rail had lower operating costs varied considerably from city to city and depended on what cost measure was used. In general, we did not find a systematic advantage for one mode over the other on operating costs.

The performance of the Bus Rapid Transit and Light Rail systems can be comparable. For example, in the six cities we reviewed that had both types of service, Bus Rapid Transit generally operated at higher speeds. In addition, the capacity of Bus Rapid Transit systems can be substantial; we did not see Light Rail having a significant capacity advantage over Bus Rapid Transit. For example, the highest ridership we found on a Light Rail line was on the Los Angeles Blue Line, with 57,000 riders per day. The highest Bus Rapid Transit ridership was also in Los Angeles on the Wilshire-Whittier line, with 56,000 riders per day. Most Light Rail lines in the United States carry about half the Los Angeles Blue Line ridership.

Bus Rapid Transit and Light Rail each have a variety of other advantages and disadvantages. Bus Rapid Transit generally has the advantages of (1) being more flexible than Light Rail, (2) being able to phase-in service rather than having to wait for an entire system to be built, and (3) being used as an interim system until Light Rail is built. Light Rail has advantages, according to transit officials, associated with increased economic development and improved community image, which they

---

<sup>17</sup>Generally, the seating capacity of a single Light Rail vehicle is about 110 passengers; a 40-foot bus can seat about 50 passengers, and an articulated bus can seat about 70 passengers.

<sup>18</sup>The six cities were Dallas, Denver, Los Angeles, Pittsburgh, San Diego, and San Jose.

---

believe justify higher capital costs. However, building a Light Rail system can have a tendency to provide a bias toward building additional rail lines in the future.

Transit operators with experience in Bus Rapid Transit systems told us that one of the challenges faced by Bus Rapid Transit is the negative stigma potential riders attach to buses. Officials from FTA, academia, and private consulting firms also stated that bus service has a negative image, particularly when compared with rail service. Communities may prefer Light Rail systems in part because the public sees rail as faster, quieter, and less polluting than bus service, even though Bus Rapid Transit is designed to overcome those problems. FTA officials said that the poor image of buses was probably the result of a history of slow bus service due to congested streets, slow boarding and fare collection, and traffic lights. FTA believes that this negative image can be improved over time through bus service that incorporates Bus Rapid Transit features.

---

## Barriers to More Extensive Use of Bus Rapid Transit

A number of barriers exist to funding improved bus systems such as Bus Rapid Transit. First, an extensive pipeline of projects already exists for the New Starts Program. Bus Rapid Transit is a relatively new concept, and many potential projects have not reached the point of being ready for funding consideration because many other rail projects are further along in development. As of March 2002, only 1 of the 29 New Starts projects with existing, pending or proposed grant agreements uses Bus Rapid Transit, and 1 of the 5 other projects near approval plans to use Bus Rapid Transit. Some Bus Rapid Transit projects do not fit the exclusive right-of-way requirements of the New Starts Program and thus would not be eligible for funding consideration. FTA also administers a Bus Capital Program with half the funding level of the New Starts Program; however, the existing Bus Capital Program is made up of small grants to a large number of recipients, which limits the program's usefulness for funding major projects. Although FTA is encouraging Bus Rapid Transit through a Demonstration Program, this program does not provide funding for construction but rather focuses on obtaining and sharing information on projects being pursued by local transit agencies. Eleven Bus Rapid Transit projects are associated with this demonstration program.

In summary, as we approach the end of the TEA-21 authorization period, there is a long list of potential transit projects vying for limited New Starts funding. The New Starts program will likely start the next authorization

---

period with a considerable number of future commitments, which could significantly increase competition for funding. Bus Rapid Transit, because of its lower capital costs, has the potential to expand the benefits of limited federal funding. In addressing their transportation problems, communities will ultimately formulate proposals on the basis of a number of factors, including cost; ridership; environmental impacts; and a community's needs, public attitudes, and perceived ability to obtain federal funding. We believe that because of its potential merits and cost advantages, Bus Rapid Transit should be given serious consideration as options are explored and evaluated.

Mr. Chairman, this concludes my testimony. I would be pleased to answer any questions you or Members of the Subcommittee may have.

---

## Contacts and Acknowledgments

For information about this testimony, please contact John Anderson at (202) 512-2834 or [andersonj@gao.gov](mailto:andersonj@gao.gov). This statement is available on GAO's home page at <http://www.gao.gov>. Individuals making key contributions to this testimony were Robert Ciszewski, Susan Fleming, Ron Stouffer, Stacey Thompson, and Glen Trochelman.